69150

24,2120

S/139/59/000/06/006/034
E032/E114

AUTHOR: Preobrazhenskiy, N.G.

TITLE: On the Deformation of the Contour of a Spectral Line Emitted in a High Temperature Optically Dense Plasma

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 6, pp 31-41 (USSR)

ABSTRACT: An attempt is made to systematise, from a single point of view, all the processes which have an effect on the magnitude and the distribution of radiation in spectral lines emitted by atoms and ions in a nonuniform, high temperature plasma having a considerable optical thickness. An analysis is given of the connection between the Bartels and the Cowan-Dieke theories. Particular attention is paid to the deformation of the spectral line contours when a strong continuum is superimposed upon them. The model of the source of radiation is taken to be in the form of an axially symmetric plasma layer, with the direction of observation perpendicular to the layer. It is assumed that the line contour undistorted by reabsorption is the same for all points in the source. It is further assumed that the

Card 1/3

69150

S/139/59/000/06/006/034
E032/E114

On the Deformation of the Contour of a Spectral Line Emitted in a High Temperature Optically Dense Plasma

emission and absorption contours are identical, the shift between the absorption and emission lines being zero. Under these simplifications it is much easier to discuss the spatial nonuniformity of the source which is due to the nonuniform distribution of emitting and absorbing atoms. The paper is divided into three sections. The first section deals with the central part of the contour, the second with the wings, and the third with the effect of a background on the form of spectral lines. The paper is largely concerned with comparing and finding common points in the theories of Bartels, Cowan-Dieke, Zwicker, Edels and others. It is thus essentially a critical review of already published work. Acknowledgements are made to Professor Doctor N.A. Prilezhayeva for advice.
There are 51 references.

Card 2/3

69150

S/139/59/000/06/006/034
E032/E114

On the Deformation of the Contour of a Spectral Line Emitted in a High Temperature Optically Dense Plasma

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva
(Siberian Physico-Technical Institute at Tomsk State University imeni V.V. Kuybyshev)

Card 3/3

SUBMITTED: April 24, 1959

4

24,2

S/139/59/000/06/030/034
A052/E114

AUTHOR: Preobrazhenskiy, N.G.

TITLE: On the Degree of Non-Uniformity of an Arc Discharge

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 6, pp 173-175 (USSR)

ABSTRACT: The "degree of non-uniformity" n defined by Cowan and Dieke (Ref 1) is a stable characteristic of the plasma in an arc discharge and describes the distribution of emitting and absorbing atoms. In Refs 3 and 4 the present author suggested new methods for the determination of a number of important plasma characteristics which would lead to a more accurate value for n. The present note reports two new methods which may be used to determine n from a single spectral line. The two methods are as follows. In the first method one determines the line widths $2\delta_0$ and $2\delta_0'$ where the former corresponds to a completely transparent emitting layer and the latter to a certain threshold value of the optical thickness μ_0, such that if this value is exceeded one can detect the beginning of self-reversal. The two line widths can be determined without difficulty and their ratio depends unambiguously on n for a given form of the contour $P(\nu)$

Card 1/2

69170
S/139/59/000/06/030/034
E032/E114

On the Degree of Non-Uniformity of an Arc Discharge

of a non-reabsorbed line. Fig 1 shows a plot of the above ratio against $1/n$ for a dispersion contour (curve 1), and a Doppler contour (curve 2). Curve 3 shows $1/\mu_0$ as a function of $1/n$. As can be seen, the method will ensure sufficient accuracy when $n = 1\text{-}1.3$. In the second method a measurement is made of $2\delta_0$, the ratio $I_m/I(\mu_0)$, and the distance between the peaks of the self-reversed line. The Cowan-Dieke theory may then be used to set up three equations in three unknowns from which n can be determined. The two methods have been checked experimentally using a Fabry-Perrot interferometer, and were found to be satisfactory.

Card 2/2

There are 1 figure, 1 table and 12 references of which 1 is English, 1 a translation from English, 3 German and 7 Soviet.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva
(Siberian Physico-Technical Institute of the Tomsk State University imeni V.V. Kuybyshev)

SUBMITTED: April 14, 1959

PREOBRAZHENSKIY, N.G.

Evaluation of the effect of reabsorption on the intensity of a spectral line. Izv. vys. ucheb. zav.; fiz no.6:57-65 '61. (MIRA 15:1)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete imeni V.V. Kuybysheva.
(Spectrum analysis)

S/048/62/026/007/027/030
B125/B104

AUTHOR: Preobrazhenskiy, N. G.

TITLE: Photometric width of a spectral line as a measure of its intensity

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 7, 1962, 953-955

TEXT: A study is made of the applicability of the method of photometric line width for emission-spectrum analysis of ferroalloys (ferrochromium and ferromanganese) in d-c arcs (220 v, 5 ÷ 15 a) and a-c arcs (5 ÷ 20 a) by means of ИСП-28 (ISP-28) and КСА-1 (KSA-1) spectrographs. The analysis is more accurate the wider the photometric width d and the smoother and the flatter that region of the line where d is measured. The spectral lines that are largely influenced by reabsorption and resonant interaction, and sometimes also the lines strongly widened due to the Lorentz and Stark effects, are best suited for measuring the photometric width. Wide photographic pictures of the spectral lines are obtained by incoherent illumination of the slit or by an increase in the

Card 1/2

diameter of the light beam in the collimator plane. The analysis accuracy increases with increasing linear dispersion and increasing slit width. Fine-grained photographic emulsions with thin layers and small contrast are best suited. When the region of the line to be photometrized is approximated by a trapezoid, the microphotometer slit should not be too narrow. The calibration curve is best plotted in the coordinates d and log C. When the method of the photometric line width is used the mean square error is much smaller than when the blackening differences are recorded in the ordinary way. There are 2 figures.

ASSOCIATION: Laboratoriya spektroskopii Sibirskogo fiziko-tekhnicheskogo instituta (Laboratory of Spectroscopy of the Siberian Physicotechnical Institute)

ACC NR: AP7003146 SOURCE CODE: UR/0368/66/005/006/0706/0711

AUTHOR: Preobrazhenskiy, N. G.; Kolobova, G. A.; Terpugova, N. S.

ORG: none

TITLE: Theory of quantitative spectrum analysis with a laser excitation source

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 6, 1966, 706-711

TOPIC TAGS: laser application, spectrum analysis, quantitative analysis, optic density, laser spectroscopy

ABSTRACT: The extensive inhomogeneity and considerable optical density characteristic of the luminous layer produced by using a laser to heat a specimen make conventional methods for recording the integral line intensity unsuitable. The spectral region separating the self-reversed maxima is preferable as a measure of the concentration of the element in question. The paper contains a theoretical study of the dependence of the above spectral region on the optical thickness of the emitting layer under various conditions of spectrum excitation. Orig. art. has: 19 formulas and 2 figures. [Authors' abstract] [AM]

SUB CODE: 20/SUBM DATE: 26Jul65/ORIG REF: 007/OTH REF: 006/
UDC: 543.42

Card 1/1

PREOBRAZHENSKIY, N.G.

Anomalous graduation graphs in emission spectrum analysis. Izv. AN SSSR. Ser. fiz. 26 no.7:934-936 Jl '62. (MIRA 15:8)
(Spectrum analysis)

PREOBRAZHENSKIY, N.G.

Photometric width of a spectral line as a measure of its intensity. Izv. AN SSSR. Ser. fiz. 26 no.7:953-955 Jl '62. (MIRA 15:8)

1. Laboratoriya spektroskopii Sibirskogo fiziko-tekhnicheskogo instituta.
(Photometry) (Spectrum analysis)

PREOBRAZHENSKIY, N.G.

Characteristics of the absorption of light in an inhomogeneous plasma. Dokl. AN SSSR 140 no.4:801-804 O '61. (MIRA 14:9)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete im. V.V.Kuybysheva. Predstavleno akademikom A.N.Tereninym.
(Absorption of light) (Plasma (Ionized gases))

L 14739-65 EEC(b)-2/EEC(k)-2/EWA(k)/EWP(k)/EWT(1)/T/EWA(m)-2 Pf-4/Pi-4/Pl-4/Po-4 AFWL/SSD/ESD(t)/IJP(c) WW/WC

ACCESSION NR: AP5000541 S/0051/64/017/006/0809/0814

AUTHORS: Preobrazhenskiy, N. G.

B

TITLE: Contribution to the theory of relaxation of optically oriented atomic systems

SOURCE: Optika i spektroskopiya, v. 17, no. 6, 1964, 809-814

TOPIC TAGS: relaxation time, optical orientation, spin lattice relaxation, spin orbit interaction

ABSTRACT: The authors analyze theoretically the relaxation characteristics of optically oriented systems, such as cells containing a diamagnetic buffer gas and a special organic inhibitor and used in experiments to increase the longitudinal relaxation time. The motion of the oriented atoms in the cell is described by a diffusion equation, and an effective parameter is introduced in the dissipative term of the diffusion equation to avoid the necessity

Card 1/2

L 14739-65
ACCESSION NR: AP5000541

of solving a system of kinetic equations with account of the change in the populations of the ground-state subgroups. Cylindrical and spherical cells are considered. It is shown that the longitudinal relaxation time is not defined uniquely but is characterized in the general case by a matrix, having different elements for the sphere and for the cylinder. A semi-empirical approach is proposed to take account theoretically of the role of the organic inhibitor which lengthens the relaxation time, and it is shown that this approach yields satisfactory agreement with experiment. Orig. art. has: 3 figures and 21 formulas.

ASSOCIATION: None

SUBMITTED: 16Jan64 ENCL: 00

SUB CODE: OP, GP NR REF SOV: 005 OTHER: 018

Card 2/2

PREOBRAZHENSKIY, N.G.

Increasing the accuracy in arsenal determination of small concentrations. Zav. lab. 28 no.12:1482-82 '62. (MIRA 17:8)

1. Sibirskiy fiziko-tekhnicheskiy institut, Tomsk.

L 23751-66 EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG
ACC NR: AP6008109 SOURCE CODE: UR/0139/66/000/001/0042/0047

AUTHOR: Preobrazhenskiy, N. G.; Senina, S. V.; Senina, A. V.

ORG: Siberian Physicotechnical Institute im. V. D. Kuznetsov (Sibirskiy fiziko-tekhnicheskiy institut)

TITLE: On the time of longitudinal relaxation of oriented atoms

SOURCE: IVUZ. Fizika, no. 1, 1966, 42-47

TOPIC TAGS: relaxation process, Zeeman effect, optic spectrum, hyperfine structure

ABSTRACT: The authors present a detailed derivation of expressions for the time of longitudinal relaxation of a system of optically oriented atoms contained in a cell of cylindrical or spherical configuration. The derivation is based on the quantum theory of optical orientation, whereby the longitudinal relaxation is described with the aid of a density-matrix formalism. The results show that the formulas derived for the relaxation times can be useful not only to investigate relaxation processes in the radio frequency of the spectrum (set of Zeeman or hyperfine sublevels), but also in optical spectroscopy (pair of levels connected with magnetic-dipole transition). Other possible applications of the results are briefly discussed. Orig. art. has: 41 formulas.

SUB CODE: 20/ SUBM DATE: 11Mar64/ ORIG REF: 001/ OTH REF: 005

Card 1/1

34190
S/139/61/000/006/009/023
E032/E514

24,2400
AUTHOR: Preobrazhenskiy, N.G.

TITLE: An estimate of the influence of the reabsorption effect on the spectral line intensity

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika. no.6, 1961, 57-65

TEXT: The author derives new criteria for the limiting concentration of atoms in plasma below which the error introduced into the measured intensity by reabsorption does not exceed 2%. The relation between the limiting concentration N_{lim}, the oscillator strength f, the Doppler half-width $\delta_{Doppler}$ and the diameter of the emitting cloud ℓ is shown to be

$$\frac{N_{lim} f \ell}{\delta_{Doppler}} = 5.6 \qquad (17)$$

If the half-width is not determined from pyrometric data but is measured directly with some high resolution instrument, and

Card 1/3

the Voigt parameter a is large, then the righthand side of Eq.(17) should be multiplied by $\sqrt{\pi \ln 2}$ (the author, Ref.8: Paper read at the 13th All Union Spectroscopy Conference Leningrad, 1960) and the result becomes

$$\frac{N_{lim} f \ell}{\delta_{dispersion}} = 8.3 \qquad (18)$$

In the second part of this paper the author reviews the published information on secondary processes, including reabsorption. It is pointed out that the experiments of B. Barnes and E. Adams (Ref.27: Phys.Rev., 53, 545, 1938; Ref.28: Ibid. 53, 556, 1938) suffer from various errors and, in particular, reabsorption of radiation was allowed for only very approximately. V.A Fabrikant (Ref.37: Izv.AN SSSR, No.3, 441, 1936; Ref.38: UFN, 48, 613, 1952) has shown that the fraction of radiation leaving the plasma is in most cases larger than that reported by Barnes and Adams. It is also shown that reabsorption was not taken correctly into account

3419

An estimate of the influence ... S/139/61/000/006/009/023
E032/E514

in the work of R. Mason (Ref.30: Physica, 5, 777, 1938). A review of published information leads the author to the conclusion that electrons play a dominating role in the excitation of atoms in an arc discharge at low pressures. Previous work by the author in this field was reported in Ref.7 (Izv.vuzov MVO SSSR, Fizika, 3, 84, 1959). There are 2 figures, 1 table and 47 references: 21 Soviet-bloc and 26 non-Soviet-bloc. The four latest English-language references read as follows: Ref.15: W.Lochte-Holtgreven, Rep.Progr.Phys., 21, 312, 1958; Ref.20: L. Ahrens, Spectrochemical Analysis, Cambridge, 1950; Ref.24: A. Bardocz, Appl.Spectroscopy, 11, 167, 1957; Ref.25: A. Bardocz, Brit.J.Appl.Phys., 10, 310, 1959

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V. V. Kuybysheva
(Siberian Physico-Technical Institute of the Tomsk State University imeni V. V. Kuybyshev)

SUBMITTED: November 12, 1960

Card 3/3

65720
SOV/139-59-2-19/30

24.2120

AUTHOR: Preobrazhenskiy, N.G.

TITLE: On the Mutual Spatial Distribution of Emitting and Absorbing Atoms in the Plasma of an Arc Discharge

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 2, pp 129-134 (USSR)

ABSTRACT: Cowan and Dieke (Ref 14) have given the following expression for the radial distribution function

$$f(r) = \frac{n}{2}\varphi(r)\left[\int_r^\infty \varphi(x)dx\right]^{n-1} \qquad (1)$$

where f(r) determines the distribution of emitting atoms and $\varphi(r)$ the distribution of absorbing atoms. This equation has been shown by many workers to apply to an arc discharge. The integral equation given by Eq (1) is not of a standard type. It may be solved for $\varphi(r)$ by means of the substitution given by Eq (2) and the solution is

$$\varphi(r) = \frac{2f(r)}{n\left[2\int_r^\infty f(x)dx\right]^{\frac{n-1}{n}}} \qquad (3)$$

Card 1/3

On the Mutual Spatial Distribution of Emitting and Absorbing Atoms in the Plasma of an Arc Discharge

The radial distribution of absorbing atoms has been calculated using the form of f(r) given by Cowan and Dieke (ibid). Fig 1 shows the distributions obtained for various values of n. It is clear that the maximum concentration of emitting atoms is not on the axis of the arc. For higher n, the maximum is further away from the axis. The temperature distribution can also be determined using Eq (3) and is given by Eq (5). Fig 2 shows the temperature distribution for different n. Once the temperature distribution is known, the electron concentration may be calculated (Ref 26). A method is suggested for taking into account reabsorption in the calculation of the function f(r). This involves an integral equation of the Abel type (Eq 6) and a number of parameters from the Cowan-Dieke theory. Acknowledgments are made to Professor N.A.Prilezhayeva and Docent Yu.A.Byuler for discussions of the present work. There

65720

SOV/139-59-2-19/30

On the Mutual Spatial Distribution of Emitting and Absorbing Atoms in the Plasma of an Arc Discharge

are 2 figures and 30 references, 16 of which are Soviet, 10 German, 3 English and 1 Dutch.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva (Siberian Physico-Technical Institute of the Tomsk State University imeni V.V.Kuybyshev)

SUBMITTED: August 21, 1958

Card 3/3

24.3420

66600

AUTHOR: Preobrazhenskiy, N.G. SOV/139-59-3-13/29

TITLE: The Integral Intensity of a Spectral Line Emitted in an Optically Dense, Non-uniform Source of Light

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1959, Nr 3, pp 84-94 (USSR)

ABSTRACT: Ladenburg's formulae (Refs 5-7) for absorption of radiation in a uniform layer of plasma having a finite optical thickness are generalized to a layer with an arbitrary non-uniformity, using the Cowan-Dieke theory (Ref 1). The calculation has been carried out assuming that an infinitely thin layer of plasma emits lines whose intensity distribution is described by a) the dispersion formula, b) the Doppler formula, and c) the Lindholm function. Fig 1 shows the effect of non-uniformity of the source on the integral intensity of a spectral line for the Doppler case. Fig 2 shows the analogous plot for the dispersion profile. The quantity F(p,n) which is plotted in these graphs is defined by Eq (2). It is shown that the upper limits for the absorption parameter p_o (cf Ref 1) for which the non-uniformity of the source may be ignored are as follows:

Card 1/2

66600

SOV/139-59-3-13/29

The Integral Intensity of a Spectral Line Emitted in an Optically Dense, Non-uniform Source of Light

Doppler profile:	$1 \leqslant n < \infty$	$p_0 = 0.50$
	$1 < n \leqslant 2$	$p_0 = 0.75$
dispersion profiles:	$1 \leqslant n < \infty$	$p_0 = 0.7$
	$1 < n \leqslant 2$	$p_0 = 1.0$

There are 2 figures and 40 references, of which 14 are Soviet, 13 German, 7 English, 2 French, 2 Hungarian and 2 Swedish.

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V. Kuybysheva (Siberian Physico-technical Institute of the Tomsk State University imeni V.V. Kuybyshev)

Card 2/2

SUBMITTED: November 13, 1958

PREOBRAZHENSKIY, N.G.

Skewing of the spectral line of a high-temperature, optically dense plasma. Izv.vys.ucheb.zav.; fiz. no.6:31-41 '59.
(MIRA 13:6)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosuniversitete imeni V.V.Kuybysheva.
(Plasma (Ionized gases)--Spectra)

PREOBRAZHENSKIY, N.G.

Degree of inhomogeneity of an arc discharge. Izv.vys.ucheb. zav.; fiz. no.6:173-175 '59. (MIRA 13:6)

1. Sibirskiy fiziko-tekhnicheskiy institut pri Tomskiy gosuniversitete imeni V.V.Kuybysheva.
(Electric arc--Spectra) (Plasma (Ionized gases))

SOV/51-7-2-28/34

AUTHOR: Preobrazhenskiy, N.G.

TITLE: On the Functional Description of the Spectral Line Profiles in the Cowan--Dieke and Bartels Theories (O funktsional'nom opisanii konturov spektral'nykh liniy v teoriyakh Kouena-Dike i Bartel'sa)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 273-275 (USSR)

ABSTRACT: Cowan and Dieke (Ref 1) and Bartels (Refs 2, 3) proposed independently theories which lead to relationships between the spectroscopic characteristics of optically non-uniform plasma of a gaseous discharge with the profiles of the spectral lines emitted by such a plasma. The present paper is a critical comparison of the expressions for the spectral line profiles given by the two theories. It was found that even in the special case when the line profile corresponding to an infinitely thin emitting layer does not depend on space coordinates, the Bartels theory is more complete and generally valid than the Cowan and Dieke theory. The reason for this lies in the greater generality of the Bartels solution of the variational problem; Cowan and Dieke restricted too much the

Card 1/2

On the Functional Description of the Spectral Line Profiles in the Cowan--Dieke and Bartels Theories SOV/51-7-2-28/34

function which describes the non-uniformity of the source. The paper is entirely theoretical. There are 1 figure and 5 references, 2 of which are Soviet, 2 German and 1 English.

SUBMITTED: February 24, 1959

Card 2/2

PREOBRAZHENSKIY, N.G.

Intensity distribution in the contour of a spectrum line capable of self-reversal. Opt. i spektr. 6 no.1:120-121 Ja '59. (MIRA 12:3)
(Spectrum analysis)

S/058/61/000/007/038/086
A001/A101

AUTHORS: Krasil'nikova, A.M., Preobrazhenskiy, N.G.

TITLE: Quantitative spectral analysis by the method of spectrogram scanning

PERIODICAL: Referativnyy zhurnal. Fizika, no. 7, 1961, 172-173, abstract 7G120 ("Dokl. Mezhvuz. nauchn. konferentsii po spektroskopii i spektr. analizu". Tomsk, Tomskiy un-t, 1960, 44 - 46)

TEXT: The authors propose to use the integrated value of blackening obtained by scanning the line along the slit of the microphotometer instead of maximum blackening of the lines, when conducting spectral analysis for quantitative measurements by the photographic method. Examples are presented confirming the possibility of a considerable reduction of analysis errors when using the method proposed as compared with the method of measuring the difference in blackening the lines or measuring the "photometric width" of the lines.

M. Britske

[Abstracter's note: Complete translation]

Card 1/1

29009
S/020/61/140/004/009/023
B104/B108

24, 3200 (1163, 1395, 1051)

AUTHOR: Preobrazhenskiy, N. G.

TITLE: The nature of light absorption in an inhomogeneous plasma

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 4, 1961, 801 - 804

TEXT: To describe the complicated effects in an inhomogeneous high-temperature plasma, H. Bartels (Zs. Phys., 125, 596 (1948)) and R. Cowan et al. (Rev. Mod. Phys., 20, 418 (1948)) introduced the model of the axisymmetric emitter. The author had studied this model in previous works (Optika i spektroskopiya, 7, 273 (1959); Izv. Vyssh. uchebn. zaved., Fizika, No. 3, 84 (1959)). The equivalent width of the lines was derived as a function of the optical density for a homogeneous absorbing layer (E. van der Held, Zs. Phys., 70, 508 (1931); S. Penner et al., JOSA, 43, 385 (1953); G. Plass et al., Astrophys. J., 117, 225 (1953)). In the present work, the author generalizes this model to inhomogeneous absorbing layers in order to obtain the equivalent line width as a function of the optical density of the inhomogeneous absorbing layer. The graphs for this function are called "curves of growth". Making use of formulas and data from previous works,

Card 1/3

The nature of light absorption in ...

the author constructs curves of growth for both homogeneous and inhomogeneous emitters. It is shown that the entire range of optical densities investigated may be divided into five intervals. In the first interval in which the optical density $k_0 l$ of the layer is below 0.5, the layer may be considered transparent. In the second interval ($0.5 < k_0 l < 3.0$), the inclination of the curve of growth decreases slightly, which corresponds to the first stage of self-reversal of lines. In the third interval ($3.0 < k_0 l < 15.0$), the inclination of the curve of growth is the least. The tangent of the inclination angle may even become negative. In the fourth interval ($15 < k_0 l < 100$), the "root law" is satisfied. The tangent of the inclination angle is 0.5. In the fifth interval ($k_0 l > 100$) the tangent of the inclination angle exceeds 0.5. The most interesting property of these generalized "curves of growth" is the existence of an anomalous part in which the growth of the optical density is accompanied by a decrease of the equivalent line width. This effect occurs with sufficiently small Voigt parameter. The experimental conditions for securing this effect

29009
S/020/61/140/004/009/023
B104/B108

The nature of light absorption in ...

were studied. The results obtained may be used for proving the calibration curves for spectral analysis. There are 2 figures, 1 table, and 16 references: 3 Soviet and 13 non-Soviet. The two most important references to English-language publications read as follows: D. Posener, Austral. J. Phys., 12, 184 (1959); O. Oldenberg et al., J Chem Phys., 6, 439 (1938); 12, 351 (1944).

ASSOCIATION: Sibirskiy fiziko-tekhnicheskiy institut pri Tomskom gosudarstvennom universitete im. V. V. Kuybysheva (Siberian Physicotechnical Institute at Tomsk State University imeni V. V. Kuybyshev)

PRESENTED: May 19, 1961, by A. N. Terenin, Academician

SUBMITTED: May 17, 1961

Card 3/3

L 19752-65 AEDC(b)/SSD/SSD(c)/AFWL/ASD(a)-5/RAEM(1)/RAEM(j)/ESD(gs)/ESD(t)

ACCESSION NR: AT5000420 S/0000/64/000/000/0005/0008

AUTHOR: Preobrazhenskiy, N.G.

TITLE: A new generalized admixture method B+1

SOURCE: Sibirskoye soveshchaniye po spektroskopii. 1st, Kemerovo, 1962. Spektroskopiya; metody* i primeneniye (Spectroscopy; methods and application). Doklady* soveshchaniya. Moscow, Izd-vo Nauka, 1964, 5-8

TOPIC TAGS: admixture method, spectroscopy, quantitative analysis, radiation absorption

ABSTRACT: Admixture methods are the best way of solving the problem of standardizing samples of complex composition and increasing the sensitivity of spectral analysis. One of the most radical attempts to increase the precision of the method of admixtures, based on a quantitative description of the process of absorption of luminous radiation, is a method proposed by A. Halperin and S. Sambursky, and involving the use of the formula

$$x = C_v^{-1} \ln \frac{A - \exp(-c_v \Delta)}{A - 1} \qquad (1)$$

where Δ is a known admixture, A is the measured intensity ratio, and C_v is a parameter determined experimentally. In this article the author has tried to improve upon the

Card 1/2

L 19752-65
ACCESSION NR: AT5000420

Halperin-Sambursky method in several ways: (1) by taking into account the inhomogeneity of the source; (2) by removing the restriction of the mandatory use of multiplets in calculating the parameter C_V; (3) by deriving the most rational relationships between the values of the admixtures introduced and the concentration being determined. Following a mathematical treatment of these points, the author shows that the relative determination error is of the order of 4%. Orig. art. has: 1 figure and 15 formulas.

ASSOCIATION: none

SUBMITTED: 09May64 ENCL: 00 SUB CODE: GC

NO REF SOV: 001 OTHER: 009

Card 2/2

PREOBRAZHENSKIY, N.G.; SENINA, A.V.; SENINA, S.V.

Calculating the function of a source for an optically dense plasma layer. Izv. vys. ucheb. zav.; fiz. 8 no.6:67-74 '65. (MIRA 19:1)

1. Sibirskiy fiziko-tekhnicheskiy institut imeni V.D. Kuznetsova. Submitted March 11, 1964.

PREOBRAZHENSKIY, N.

Model of an optimal [illegible] function. Part [illegible]

(USSR 17:7)

L 22474-66 EWT(1)/EEC(k)-2/T/EWP(k) IJP(c) WG

ACC NR: AP6009146 SOURCE CODE: UR/0139/65/000/005/0073/0076

AUTHORS: Preobrazhenskiy, N. G.; Senina, S. V. 40 B

ORG: Siberian Physicotechnical Institute im. V. D. Kuznetsov (Sibirskiy fiziko-tekhnicheskiy institut)

TITLE: On the influence of surface inhibitors on the relaxation time of oriented atoms 21

SOURCE: IVUZ. Fizika, no. 5, 1965, 73-76

TOPIC TAGS: relaxation process, [redacted], surface inhibitor, [redacted], nuclear resonance

ABSTRACT: This is a continuation of earlier work by the authors (Opt. i spectr. v. 17, 809, 1964), aimed at developing a theory capable of simultaneously taking into account the influence exerted on the relaxation time of the characteristics of either a buffer gas or a surface inhibitor, used in applications of the double radio-optical resonance method. In view of recent publication of data by R. Brewer (J. Chem. Phys. v. 38, 3015, 1963, and earlier), and in view of the

Card 1/2

2

fact that the earlier study was restricted by the lack of experimental data, the authors review their earlier work, as well as work by others, and calculate the diffusion of oriented atoms in a cell of cylindrical or spherical configuration, and especially the probability of disorientation occurring when the atom collides with a cell wall which is coated with an inhibitor. This probability is expressed in terms of a Hamiltonian, which in turn is approximated by means of a theory developed by J. Van Vleck (Rev. Mod. Phys. v. 23, 213, 1951). The final results obtained for this probability are in good agreement with recent experimental data. Although the results of the present article cannot be regarded as a relaxation theory that can take into account both the effect of a buffer gas and of an inhibitor, it is claimed that they contribute to a better understanding of the problem. Orig. art. has: 14 formulas.

SUB CODE: 20/ SUBM DATE: 14Mar64/ ORIG REF: 001/ OTH REF: 013

Card 2/2 BK

L 04816-67 EWT(l) LIP(c) AT

ACC NR: AP6026978 SOURCE CODE: UR/0051/66/021/002/0232/0234

AUTHOR: Preobrazhenskiy, N. G.

44
B

ORG: none

TITLE: Concerning the so-called multiparameter methods of diagnosing an optically dense plasma

SOURCE: Optika i spektroskopiya, v. 21, no. 2, 1966, 232-234

TOPIC TAGS: plasma diagnostics, dense plasma, OPTIC DENSITY, SPECTRAL LINE, ABSORPTION SPECTRUM

ABSTRACT: It is known that the contour of a reabsorbed spectral line may be a useful source of information on the luminous plasma layer, which is responsible for the formation of the plasma. Unfortunately, the potential of methods of plasma diagnostics based on this contour, and particularly the accuracy of the results obtained are often overestimated. A typical illustration of this is the recently published paper of G. G. Il'in and I. S. Fishman (Opt. i spektr. 20, 387, 1966). Several fallacies on which these two authors base their diagnostic variants are analyzed in detail. Orig. art. has: 2 formulas.

SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 002

Card 1/1 UDC: 533.9

PREOBRAZHENSKIY, N.I., kand. fiziko-matematicheskikh nauk; KOMANOV, L.I.

Increasing the service reliability of a transistorized contactless position pickup. Izv. TSKHA no.2:166-172 '63. (MIRA 16:10)

PREOBRAZHENSKIY, V.A.; POLETAYEV, B.D.

Using barometric leveling in the tundra during the winter. Geofiz. razv. no. 15:156-161 '64. (MIRA 17:7)

ACCESSION NR: AT4033531 S/0000/63/000/000/0017/0050

AUTHOR: Gol'dman, A. M. (Candidate of chemical sciences); Kosty*lev, G. I.; Lubyanitskiy, I. Ya. (Candidate of chemical sciences); Minati, R. V.; Preobrazhenskiy, V. A.; Sedova, S. M.; Trubnikova, V. I.; Furman, M. S. (Doctor of chemical sciences)

TITLE: Derivation of adipic acid by nitric acid oxidation of the products of air oxidation of cyclohexane

SOURCE: Poluprodukty* dlya sinteza poliamidov (Intermediates for polyamide synthesis). Moscow, Goskhimizdat, 1963, 17-50

TOPIC TAGS: adipic acid, cyclohexanol, cyclohexane, phenol, nitric acid, cyclohexane air oxidation, cyclohexanol air oxidation, cyclohexanol nitric acid oxidation, adipic acid derivation, phenol hydrogen reduction, nitric acid oxidation catalyst, adipic acid plant, bulk reactor

ABSTRACT: This extensive report reviews existing literature on adipic acid and its derivation, considers in detail the theory and mechanism of cyclohexanol oxidation with nitric acid (chemical equations are included) and reports the effect of various catalysts on the efficiency of the process.

Card 1/4

51"

ACCESSION NR: AT4033531

Experimental studies of the process (equipment illustrated) were carried out at 1, 3.5 and 7 atm, 1st stage temperature 70C, 2nd stage 100C, nitric acid concentration 57% by weight, weight ratio of (100%) nitric acid to organic raw material 4.5:1. Results are tabulated (see table 1 in the Enclosure). Special experiments concerned X-oil residue and its oxidation with nitric acid. Analysis of the derived adipic acid showed that double recrystallization (water) and activated carbon purification of the latter provides material satisfying all government specifications relating to production of the so-called "AG" salt (a polycondensate of adipic acid and hexamethylenediamine). Experimental continuous production equipment capable of producing 100 kg of adipic acid per day was assembled and used in a series of experiments to study design requirements and optimal process factors for industrial production. The experiments involved cyclohexanol derived from hydrogen reduction of phenol and atmospheric air oxidation of cyclohexane. First stage temperature was 55 to 70C (60 to 65C for phenol-derived material), second stage and blow-off column was at 100C, nitric acid concentration 57% by weight, weight ratio as above was 4 to 4.5:1. It is concluded that bulk type reactors are suitable for continuous nitric acid oxidation at atmospheric pressure. Maximal yield of adipic acid from phenol-derived cyclohexanol in the presence of a catalyst was 1.25 kg per 1 kg of raw material. "The method of dispersion chromatography on diatomaceous brick was

Card 2/4

ACCESSION NR: AT4033531

developed by G. T. Levchenko, I. G. Solov'yeva and I. G. Malkova of GIAP. V. R. Ruchinskiy of GIAP also took part in the work." Orig. art. has: 11 tables, 6 graphs, 7 illustrations and 14 chemical formulas.

ASSOCIATION: None

SUBMITTED: 12Oct63 DATE ACQ: 06Apr64 ENCL: 01

SUB CODE: OC NO REF SOV: 019 OTHER: 012

3/4

Card

PREOBRAZHENSKIY, V.A., kand. tekhn. nauk; CHUBAROV, N.D.

Brush working member of machines for swathing milled peat. (MIRA 17:1)
Trudy VNIITP no.18:3-16 '61.

APT, L.S., kand.tekhn.nauk; PREOBRAZHENSKIY, V.A., kand.tekhn.nauk; LADUT'KO, V.F., inzh.

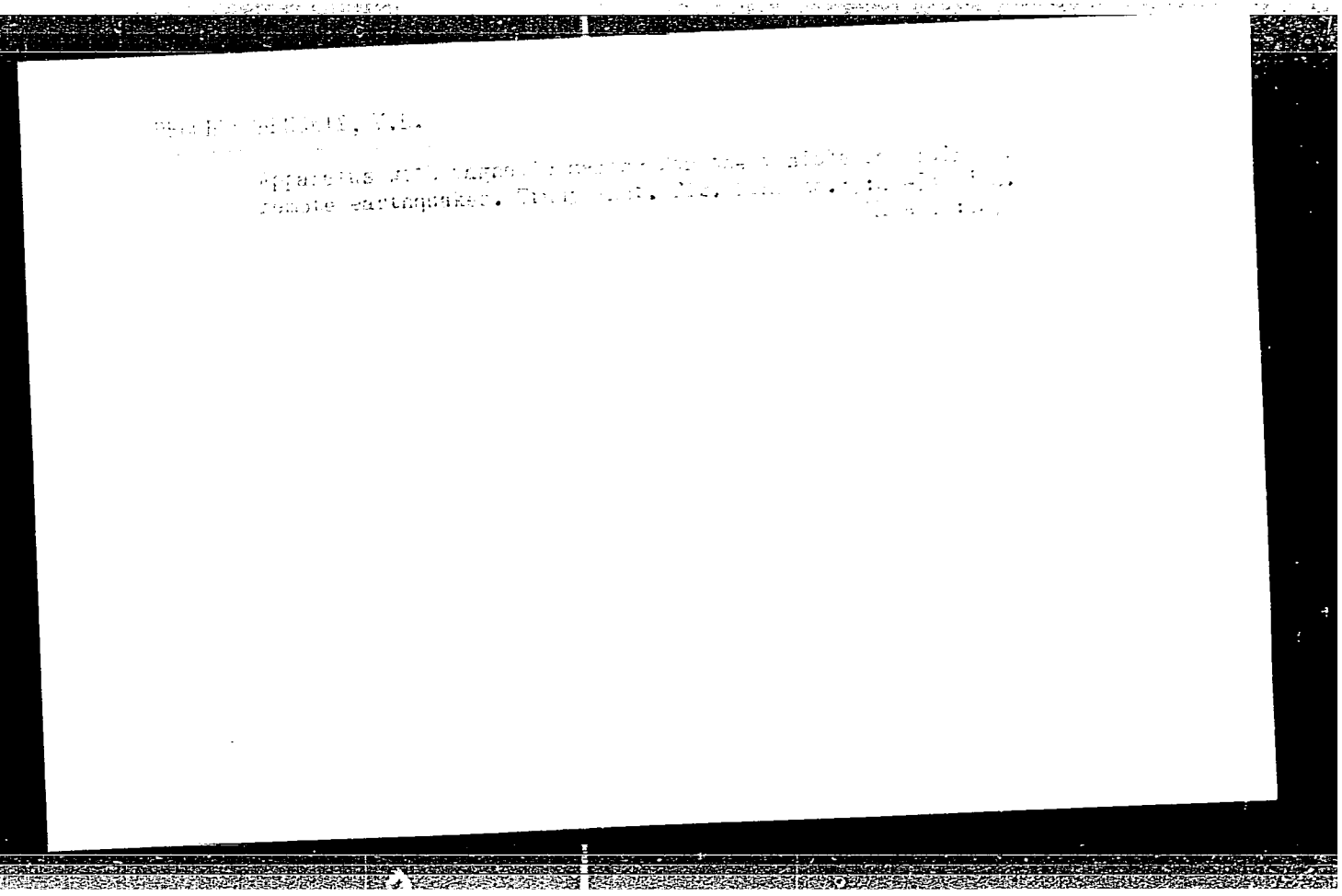
Automated line for the production of peat insulating slabs. Stroi. mat. 8 no.3:24-26 Mr '62. (MIRA 15:8)
(Peat) (Insulating materials) (Automatic control)

GOL'DMAN, A.M., kand.khimicheskikh nauk; ZAYTSEV, A.I.; KOSTYLEV, G.I.; LAKHMANCHUK, L.S.; LUBYANITSKIY, I.Ya., kand.khimicheskikh nauk; PREOBRAZHENSKIY, V.A.; FURMAN, M.S., doktor khimicheskikh nauk; Prinimali uchastiye: ZHADIN, B.V.; VESEL'CHAKOVA, T.L.; SEDOVA, S.M.; TRUBNIKOVA, V.I.; KUPIN, M.I.; ZHUKOVA, Ye.I.

Preparation of adipic acid in a continuous pilot unit. (MIRA 15:7)
Khim.prom. no.5:323-327 My '62.
(Adipic acid)

BORISEVICH, Ye.S.; PREOBRAZHENSKIY, V.B.; STEPANOV, V.V.

Six-level stylus type recorder PP-6. Trudy Inst. fiz. Zem. no.39: 54-60 '64. (MIRA 17:12)



PREOBRAZHENSKIY, V.B.; SUSOVA, A.M.

Conductivity of an electrolytic NaCl solution in high-density water vapor. Dokl. AN SSSR 159 no.5:1017-1018 D '64 (MIRA 18:1)

1. Predstavleno akademikom I.K. Kikoinym.

BORISEVICH, Ye.S., prof.; PREOBRAZHENSKIY, V.B.; STEPANOV, V.V.

Three-channel stylus-type seismic recorder R-002. Trudy Inst. fiz. Zem. no.35:30-35 '64. (MIRA 17:2)

PREOBRAZHENSKIY, V.B.

Apparatus with magnetic memory for recording remote earthquakes. Trudy Inst. fiz. Zem. no.26:78-84 '63. (MIRA 16:11)

VETCHINKIN, A.N.; PREOBRAZHENSKIY, V.B.

Automatic seismic recording unit with a magnetic memory. Trudy Inst. fiz. Zem. no.19:52-56 '61. (MIRA 15:3)
(Seismometers)

BORISEVICH, Ye.S.; GOL'DFARB, M.L.; KASTORSKIY, S.A.; PREOBRAZHENSKIY, V.B.

The PSERP-1 seismic recorder with pen tracing. Trudy Inst. fiz. Zem. no.19:73-77 '61. (MIRA 15:3)
(Seismometers) (Galvanometer)

GOL'DFARB, M.L.; PREOBRAZHENSKIY, V.B.

Four-channel recorder with pen tracing. Trudy Inst. fiz. Zem. no.19:78-80 '61. (MIRA 15:3)

(Seismometers) (Galvanometer)

BORISEVICH, Ye.S.; GOL'DFARB, M.L.; PREOBRAZHENSKIY, V.B.

Interchangeable pen-tracing galvanometers. Trudy Inst. fiz. Zem. no.19:81-85 '61. (MIRA 15:3)
(Seismometers) (Galvanometer)

L 5188-66 EWT(1)/EWA(h) GW SOURCE CODE: UR/2619/64/000/035/0030/0035

ACC NR: AT6000080

42
B+1

AUTHOR: Borisovich, Ye. S; Preobrazhenskiy, V. B.; Stepanov, V. V.
44,55 44,55 44,55

ORG: Institute of Physics of the Earth im. O.Yu. Shmidt, AN SSSR (Institut fiziki zemli AN SSSR)
44,55

TITLE: N-002 three-channel seismic pen-recorder

SOURCE: AN SSSR. Institut fiziki zemli. Trudy, no. 35, 1964, 30-35

TOPIC TAGS: seismograph, seismologic instrument, seismography, electronic circuit
12,44,55 12,44,55

ABSTRACT: This is a hot-pen recorder which was developed and tested at the "Vibropribor" Plant and which assures clear records of seismic vibrations in the range from 0 to 3 cps at a double amplitude of up to 20 mm. This instrument was designed for use as the recorder for capacitance or magnetoelectric seismographs using UPN amplifiers (schematics for principal circuit, kinematic circuit, electrical circuit, photograph of instrument, and diagram of hot pen are given). Orig. art. has: 5 figures, 1 table. [FSB: v. 1, no. 5]

SUB CODE: ES, EC / SUBM DATE: none / ORIG REF: 002

Card 1/1

0901045?

L 5187-66 EWT(1)/EWA(h) GW

ACC NR: AT6000083 SOURCE CODE: UR/2619/64/000/035/0049/0053

AUTHOR: Preobrazhenskiy, V. B. 44,55 37 B+1

ORG: Institute of Physics of the Earth im. O.Yu. Shmidt, AN SSSR (Institut fiziki zemli AN SSSR) 44,55

TITLE: Apparatus with magnetic memory and visual recording for registering distant earthquakes

SOURCE: AN SSSR. Institut fiziki zemli. Trudy, no. 35, 1964, 49-53

TOPIC TAGS: seismologic instrument, earthquake, seismography, galvanometry

76 44,55,12 10 44,55,12

ABSTRACT: The SZZ magnetic memory unit operates on a 12-volt current and is used either with the SVK, SGK or SVKM-3 magnetoelectric seismometers. The recorder is of the PP-6 type (see following paper). The frequency characteristics of the SZZ, used with the SVK seismometers, are T = 12.5 sec, D_1 = 0.45. With galvanometric recording, the characteristics are T_1 = 12.5 sec, D_1 = 0.65, T_2 = 1.2 sec, D_2 = 5, and σ^2 = 0.1 (photograph and amplitude-frequency schematic are shown). Orig. art. has: 5 figures, 1 formula. [FSB: v. 1, no 5]

SUB CODE: ES, EE / SUBM DATE: none / ORIG REF: 006

Card 1/1 hd

L 5163-66 EWT(1)/EWA(h) GW
ACC NR: AT6000084 SOURCE CODE: UR/2619/64/000/035/0054/0060

AUTHOR: Borisovich, Ye. S.; Preobrazhenskiy, V. B.; Stepanov, V. V 39 B+1
44,55 44,55 44,55

ORG: Institute of Physics of the Earth im. O.Yu. Shmidt, AN SSSR (Institut fiziki zemli AN SSSR) 44,55

TITLE: PP-6 six-channel pen recorder 25

SOURCE: AN SSSR. Institut fiziki zemli. Trudy, no. 35, 1964, 54-60

TOPIC TAGS: seismologic instrument 12,44,55, seismography 12,44,55, galvanometer

ABSTRACT: The PP-6 16 is a hot-pen recorder 10. Six interchangeable galvanometers of the GPT-11 type with individual magnet systems (natural frequency of 10 cps) are used in the PP-6 recorder. The paper rolls are 50 m long and 300 mm wide and move uniformly at speeds of 0.25, 0.5, 1, 2, and 4 mm/sec. By changing gears, speeds of 4, 8, 16, 32, and 64 mm/sec can be achieved (photographs of devices and schematics for principal design, kinematic circuit, electrical circuit, and GPT-II galvanometer are shown). Orig. art. has: 6 figures. [FSB: v. 1, no. 5]

SUB CODE: ES, EE / SUBM DATE: none / ORIG REF: 001

Card 1/1 Mcd

33517

S/019/61/000/019/[illegible]/[illegible]

D039/D112

3.9300 (1019,1327)

AUTHORS: Vetchinkin, A.N.; Preobrazhenskiy, V.B.

TITLE: An automatic seismic recording unit with a magnetic memory

SOURCE: Akademiya nauk SSSR. Institut fiziki Zemli. Trudy, no. 19 (186). Moscow, 1961, Seysmicheskiye pribory, 52-56

TEXT: The authors describe an automatic seismic recording unit with a magnetic memory consisting of a ferromagnetic tape continuously moving past successively placed recording, reproducing and erasing heads. Normally the signal is erased by the erasing head, but if it exceeds a certain level due to seismic activity, it is automatically recorded by a magnetoelectric light-beam oscillograph on photographic tape. The disadvantages of the helical-line recording method are thus avoided and photographic material saved. The recordings are also suitable for automatic mechanical processing. The memory time of 6 secs permits recording of the period immediately preceding the seismic process. The magnetic drum of the memory is driven by a synchronous motor. The unit has six operational channels and one auxiliary channel. The frequency range of the recorded vibrations is

Card 1/3

An automatic seismic .....

0.1-7.0 cycles per second. Pulse-frequency modulation with a carrier frequency of 300 cycles per second is used. The dynamic range is 50 db. Re-recording from the magnetic drum is performed by type ОП-15 (OP-15) or other oscillographs or else specially adapted ПОБ-12М (POB-12M) oscillographs. The oscillograph contains six ГБ-III-Б-5 (GB-III-B-5) galvanometers. The width of the [illegible] tape is 12 cm. A quartz clock or contact chronometer is used for the time [illegible] Power supply is 12 v d.c. The power consumption under normal conditions [illegible] during the re-recording process - 50 w. The unit (without oscillograph) [illegible] 470 x 525 mm in size and weighs 35.5 kgf. The magnetic recorder of the unit was developed by A.N. Vetchinkin and the OP-15 oscillograph by V.B. [illegible]. Field tests of the seismic recording unit were conducted at the [illegible] stantsiya Garm (Garm Seismic Station) In these tests, the ВЗГИК [illegible] graph with a resistance coil of 1,000 ohms was used as a pickup. The [illegible] netoelectric oscillograph served for re-recording. The unit operated [illegible] and recorded all earthquakes with an amplitude of more than 3 mm on [illegible] The new unit can be used at temporary and permanent seismic stati[illegible] expedi

Card 2/3

33517
S/679/61/000/019/007/019
D039/D112

An automatic seismic .....

mental batch is now being produced at the SKB Instituta fiziki zemli ... SSSR (SKB of the Institute of Physics of the Earth, AS USSR), and will later be subje... to thorough tests at Soviet seismic stations. There are 3 figures and 5 ... Soviet-bloc references.

4

Card 3/3

S/619/61/000/019/011/019
E039/E114

AUTHORS: Borisevich, Ye.S.; Gol'dfarb, M.L.; Kastorskiy, S.A.; Preobrazhenskiy, V.B.

TITLE: The PSERP-I seismic pen-recorder

SOURCE: Akademiya nauk SSSR. Institut fiziki zemli. Trudy, no. 19 (1[illegible]. Moscow, 1961, Seysmicheskiye pribory, 73-77

TEXT: The authors describe the ПСЕРП-I (PSERP-I) seismic pen recorder for producing a continuous visible recording of seismic oscillations. The recording is made on an endless paper tape by means of three exchangeable galvanometers, equipped with ink pens or heated pens. In the latter case, a tape with a low-melting coating is used. Both the paper tape and the pen-recording galvanometers move simultaneously, thus producing a helical-line recording. The recorder can record seismic vibrations with a frequency of up to [illegible] cps at a double amplitude of up to 20 mm. The recording is made along an arc and the thickness of the recording lines is 0.5 mm. All the pen-recording galvanometers are assembled into independent magnetic systems with shunts, and are mounted on a common moving carriage. The paper tape is 304-mm wide and 900-mm long and is transported at speeds of [illegible]

Card 1/2

S/119/61/000/019/011/019
D059/D112

The PSERP-I seismic pen recorder

60 and 120 mm/sec. The carriage moves at speeds of 1.7- and 3.44 mm per revolution of the tape. The tape and the carriage are moved by a synchro motor or a spring mechanism wound up every 12 hrs. The instrument is 460 x 470 x 290 mm in size and weighs 33 kgf. Its kinematic system and electrical circuit are described. The PSERP-I can be used at permanent and temporary seismic stations. It has successfully passed tests and its industrial production is now being mastered at the Kishinevskiy zavod elektroizmeritel'nykh priborov (Kishinev Electrical Measuring Instruments Plant). There are 4 figures and 1 table.

V

Card 2/2

S/619/61/000/019/012/019
D039/D112

AUTHORS: Gol'dfarb, M.L.; Preobrazhenskiy, V.B.

TITLE: A four-channel pen recorder

SOURCE: Akademiya nauk SSSR. Institut fiziki Zemli. Trudy, no. 19 (186) Moscow, 1961, Seysmicheskiye pribory, 78-80

TEXT: The authors describe a four-channel pen recorder for producing immediately visible recordings of processes which can be converted into oscillations of electric current or voltage. The recordings are made by means of four exchangeable magnetoelectric pen-recording galvanometers installed in a single unit with a permanent magnet. The recorder can be adapted for ink recording on chart paper or for recording by a heated pen on special paper with a low-melting coating. The recordings are made on a non-perforated 120-mm wide, 12 m long paper tape. The use of galvanometers of different characteristics and the wide range of available tape speeds (4, 8, 16, 32, 64 mm/sec) permit recording vibrations of up to 30 cps. The tape is transported by a MA-30 (MA-30) DC motor. The power consumption of the recorder

Card 1/2

S/619/61/000/019/012/019
D039/D112

A four-channel pen recorder

is 25 w. Its very simple electrical circuit is briefly described and illustrated. The recorder is 360 x 190 x 220 mm in size and weighs 11 kgf. It gave satisfactory recordings in preliminary laboratory tests. There are 2 figures and 1 Soviet-bloc reference.

Card 2/2

../019/61/000/019/01./01.
0039/0112

AUTHORS: Borisevich, Ye.S.; Gol'dfarb, M.L.; Preobrazhenskiy, V.B.

TITLE: Exchangeable pen-recording galvanometers

SOURCE: Akademiya nauk SSSR. Institut fiziki zemli. Trudy, no. 19 (1So).
Moscow, 1961, Seysmicheskiye pribory, 61-65

TEXT: The authors describe two types of pen-recording galvanometers: the ГПЧ (GPCh) galvanometer for ink recording on a paper tape, and the ГПТ (GPT) galvanometer for recording by means of a heated pen on paper coated with a low-melting substance. Both galvanometers were developed at the Institut fiziki zemli AN SSSR (Institute of Physics of the Earth, AS USSR) and are used in seismic instruments for producing directly visible recordings. As regards design they are similar to the ГБ (GB) mirror galvanometers [Abstracter's note: see pp 73-77 and 78-80 of the above source]. The GPCh galvanometer employs a new method of feeding ink to the pen. The ink is fed through the hollow upper frame-suspension brace connected with the pen by means of a flexible vinyl chloride tube. The pen itself is a thin glass capillary tube one of whose ends is bent downward. This method vastly improves the parameters of the galvanometers, but due to the compar-

Card 1/2

.../619/61/000/019/013/019
D039/D11

Exchangeable pen-recording galvanometers

[illegible] rigidity of the hollow brace, is not very suitable for galvanometers whose natural oscillation frequency is less than 5 cps. The pressure of the pen against the paper can be smoothly regulated, since the pen is fixed to the moving system by a thin flat spring, enabling it to move vertically together with the paper tape. At the same time, the pen is fixed sufficiently rigidly in the plane of its vibrations. The pen for the GPT galvanometer is a glass capillary with a fine nichrome wire passing through it. At one end of the pen, the wire is bent back in the form of a rhombus. The other end of the wire is attached by БФ-2 (BF-2) glue to the outside of the capillary tube. In order to heat only the tip of the pen, the nichrome wire is coated with copper, the tip of the pen being left uncoated. The GPT galvanometer uses only 0.8 w when recording vibrations of 10 cps at a double amplitude 2A = 30 mm. As regards design, parameters, characteristics and calculation, both galvanometers are similar. The basic calculation formulae are presented. Both galvanometers are now being produced at the SKB of the Institute of Physics of the Earth, AS USSR, and are being used in seismic recording instruments turned out experimentally at the Kishinevskiy zavod elektroizmeritel'nykh priborov (Kishinev Electrical Measuring Instruments Plant). There are 2 figures, 1 table and 6 Soviet-bloc references.

Card 2/2

L 21080-65 EWT(l)/EPA(s)-2 Pt-10/Pi-4 ASD(a)-5/AFETR
ACCESSION NR: AP5001510 S/0020/64/159/005/1017/1018

AUTHORS: Preobrazhenskiy, V. B.; Susova, A. M.

TITLE: Conductivity of electrolytic solution of NaCl in high-density water vapor

SOURCE: AN SSSR. Doklady, v. 159, no. 5, 1964, 1017-1018

TOPIC TAGS: sodium chloride, electric conductivity, electrolyte, water vapor, high density

ABSTRACT: As part of a program of investigations of the physical properties of substances in the transcritical range of temperatures, the author measured the conductivity of one-mole solution of NaCl in water vapor, in the vapor density range from 0.6 to 0.9 g/cm^3. The set-up consisted of a cylindrical high-pressure chamber with an internal channel 10 cm long and 1 cm i.d., in which a conductivity-measurement cell was placed. The electrical measurements were made

Card 1/2

sith the ac bridge shown in Fig. 1 of the enclosure. Plots of the resistivity of the NaCl in the vapor vs. temperature and vs. vapor density are shown in Fig. 2 of the enclosure. The appreciable decrease in the resistivity with increasing pressure confirms the ionizing effect of water vapor at high densities. More detailed research is now under way. "The authors thank Academician I. K. Kikoin for great help and continuous interest and S. V. Kersnovskiy for help in constructing the apparatus." This report was presented by I. K. Kikoin. Orig. art. has: 3 figures.

ASSOCIATION: None

SUBMITTED: 06Jul64 ENCL: 00

SUB CODE: EM,IC NR REF SOV: 001 OTHER: 002

Card 2/2

BRATCHIK, Yefim Isaakovich; VASYUTOVICH, Vasiliy Vasil'yevich; ARSKIY, F.N., retsenzent; KHOREV, B.S., retsenzent; PREOBRAZHENSKIY, V.I., red.; USENKO, L.A., tekhn. red.

[Moscow-Brest; railroad guide] Moskva - Brest; zheleznodorozhnyi putevoditel'. Moskva, Transzheldorizdat, 1962. 134 p. (MIRA 15:7)
(Railroads--Handbooks, manuals, etc.)

MATYUSHENKO, Dem'yan Yakovlevich; MATYUSHENKO, Margarita Dem'yanovna; VIRGINSKIY, V.S., retsenzent; KIBAL'CHICH, O.A., retsenzent; PREOBRAZHENSKIY, V.I., red.; USENKO, L.A., tekhn. red.

[Moscow - the Crimea; railroad guide]Moskva - Krym; zheleznodorozhnyi putevoditel'. Moskva, Transzheldorizdat, 1962. 103 p. (MIRA 15:12)

(Railroads--Guides)

PREOBRAZHENSKIY, V. K.

21(0) PHASE I BOOK EXPLOITATION SOV/2081

International Conference on the Peaceful Uses of Atomic Energy, 2d., Geneva, 1958

Doklady sovetskikh uchenykh; yadernaya fizika (Reports of Soviet Scientists; Nuclear Physics) Moscow, Atomizdat, 1959. 552 p. (Series: Its: Trudy, Vol. 1) 8,000 copies printed.

Eds. (Title page): A.I. Alikhanov, Academician; V.I. Veksler, Academician; and N.A. Vlasov, Candidate of Physical and Mathematical Sciences; Ed. of this volume: S.I. Brodskiy and B.P. Zaretskiy, Candidates of Physical and Mathematical Sciences; Ed. (Inside book): G.L. Smolyan; Tech. Ed.: Ye.I. Mazel'.

PURPOSE: This collection of articles is intended for scientific research workers and other persons interested in nuclear physics. The volume contains 43 papers presented by Soviet Scientists at the Second Conference on Peaceful Uses of Atomic Energy, held in Geneva in September 1958.

COVERAGE: It is divided into two parts. Part I contains 17 papers dealing with plasma physics and controlled thermonuclear Reactions, and Part II contains 26 papers on nuclear physics, including problems of particle acceleration and of cosmic ray physics. The first paper by L.A. Artsimovich presents a review of Soviet work on controlled thermonuclear reactions. The remaining papers in Part I deal with particular problems in this field.

papers in Part II deal in detail with various problems in nuclear physics, such as the fission of heavy atoms and their isotopes, and with the study of cosmic radiation by means of artificial earth satellites and rockets, described in a paper by S.N. Vernov. The Russian-language edition of the proceedings of the conference is published in 16 volumes. The first 6 volumes contain all the papers presented by Soviet scientists as follows: Volume (1), Yadernoye fizika (Nuclear Physics); Volume (2), Yadernyye reaktory i yadernaya energetika (Nuclear Reactor and Nuclear Power); Volume (3), Yadernoye goryucheye i metally (Nuclear Fuel and Reactor Metals), Volume (4), Khimiya radioelementov i radiatsionnykh prevrashcheniy (Chemistry of Radioelements and of Radiation Transformations); Volume 5, Radiobiologiya i radiatsionnaya meditsina (Radiobiology and Radiation Medicine); Volume (6) Polucheniye i primeneniye isotopov (Production and Use of Isotopes). The other 10 volumes contain selected papers presented at the Conference by non-Soviet scientists. In the present volume discrepancies between the English and Russian language edition of the proceedings have been noted in three articles where the texts are not identical: Akhiyezer, et al, via; Andrianov, et al, "High Current Pulsed Discharge"; Akhiyezer, et al, "High Frequency Plasma Oscillation"; and Bogolyubov, "Investigations of the Many-body Problem". The serial numbers of reports 2302 and 2504 are reversed in the English edition. Report 2211, by Mishnikov, et al, is numbered 2536 in the English edition.

TABLE OF CONTENTS:

Reports of Soviet Scientists; Nuclear (Cont.) SOV/2081

23

PREOBRAZHENSKIY, V.N., avtogreyderist.

Labor consumption has been reduced and the efficiency has increased. Avt.dor. 28 no.8:2-3 Ag '65.

(MIRA 18:11)

IORZH, K.P., kand.tekhn.nauk; ZIMIREV, V.P., inzh; PREOBRAZHENSKIY, V.N., inzh.

Use of induction generators on ships. Sudostroenie no.7:32-35 Jl '60. (MIRA 13:7)
(Electricity on ships) (Induction (Electricity))

GINEVICH, G.I.; PREOBRAZHENSKIY, V.N.; SPIRIN, V.V.

Continuous unit for milling aminoplastics. Plast.massy no.11: 58-59 '61. (MIRA 14:10)
(Aminoplastics) (Milling machinery)

NIKISHIN, V.I.; PREOBRAZHENSKIY, V.P.

Tectonics of the trans-Volga portion of Gorkiy Province in connection with oil and gas potentials. Biul. MOIP. Otd.geol. 37 no.4: 127-128 Jl-Ag '62. (MIRA 16:5)
(Gorkiy Province—Petroleum geology)
(Gorkiy Province—Gas, Natural—Geology)

ACCESSION NR: AP4042864 S/0114/64/000/007/0038/0041

AUTHOR: Preobrazhenskiy, V. P. (Candidate of technical sciences); Buvin, N. P. (Candidate of technical sciences); Pinskiy, F. I. (Engineer); Solon'ko, L. G. (Engineer); Chistyakov, V. S. (Engineer)

TITLE: Measuring temperatures of a pulsating gas stream

SOURCE: Energomashinostroyeniye, no. 7, 1964, 38-41

TOPIC TAGS: gas stream, pulsating gas stream, pulsating gas stream temperature, diesel engine

ABSTRACT: A method for measuring variable temperatures by a low-inertia temperature sensor (resistance thermometer) whose readings are interpreted by a computer on the basis of known dynamic characteristics of the sensor is offered. The temperature of the sensor is connected with that of the gas stream by this equation: $T\frac{dt_t}{d\tau}+t_t=t_n$. where t_n and t_t are the temperatures of the gas stream and the sensor, respectively, T is the sensor time constant, and τ is time. The method was used at Kolomna Diesel-Locomotive-Building Plant for

Card 1/2

ACCESSION NR: AP4042864

measuring temperatures of YaAZ-204-diesel-engine exhaust gases; a sensor with 0.03—0.05-mm-diameter, 5—9-mm-long Pt wire was employed. The error involved is claimed to be 2—3C with the measurand temperature within 600—750C. The difficulty in assessing possible additional errors is held as the main drawback of the method; in high-speed gas streams, the sensor will measure the impact temperature rather than the thermodynamic temperature; in a pulsating-speed variable-temperature stream, an additional error may arise due to a variation in the time constant of the sensor. (V. A. Tomel'gas, V. I. Spiridonov, and A. I. Ryabitsev took part in this work.) Orig. art. has: 4 figures and 12 formulas.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power-Engineering Institute)

SUBMITTED: 00 ENCL: 00

SUB CODE: PR NO REF SOV: 009 OTHER: 001

Card 2/2

PREOBRAZHENSKIY, V.P.

[Thermometric devices; plates for use in instruction] Teploizmeritel'nye pribory; uchebnye tablitsy. Moskva, Gos.energ.izd-vo, 1946. diagrams. (MIRA 14:7)

(Heat engineering--Equipment and supplies)

PREOBRAZHENSKIY, V.P.; FAMILIAN, G.B., red.

[Heat-engineering measuring instruments; charts for students] Teplotekhnicheskie izmeritel'nye pribory; uchebnye tablitsy. Moskva, Gos.energ.izd-vo. Pt.1. 1959. 17 l. (in portfolio).
(MIRA 13:5)

(Heat engineering--Study and teaching)
(Heat--Measurement)

PREOBRAZHENSKIY, V.P.; SHOMYSOV, N.M.

On the history of the geological study of Gorkiy Province. Uch. zap. GGPI no.46:110-129 '64. (MIRA 18:4)

PREOBRAZHENSKIY, V.P.; SHUMILOVSKIY, N.N., redaktor; NIKOLAYEV, S.A., redaktor; VORONIN, S.A., tekhnicheskiy redaktor

[Measurements and apparatus in heat engineering] Teplotekhnicheskie izmereniia i pribory. Izd. 2-e, perer. i dop. Moskva, Gos. energ. izd-vo, 1953. 383 p. (MLRA 8:7)
(Thermometry) (Heat engineering--Measurement)

PREOBRAZHENSKIY, V. P.

Teploizmeritel'nye pribory; uchebnye tablitsy. Moskva, Sovmetallizdat, 1946.
20 fold. col. plates.

Temperature measuring instruments; training tables.

DLC: QC274.P7

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

PREOBRAZHENSKIY, V.P.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 557 - I

BOOK

Author: PREOBRAZHENSKIY, V. P. Call No.: AF623806

Full Title: MEASUREMENT OF HEAT AND MEASURING INSTRUMENTS. 2d ed., rev. and suppl.

Transliterated Title: Teplotekhnicheskiye izmereniya i pribory. Izd. vtor. pere. i dopol.

PUBLISHING DATA

Originating Agency: None

Publishing House: State Publishing House of Power Engineering Literature (GEI)

Date: 1953 No. pp.: 383 No. of copies: 20,000

Editorial Staff

Editors: Shumilovskiy, N. N. and Nikolayeva, S. A.

PURPOSE: To serve as a textbook in colleges where courses on steam power engineering, thermodynamics and control and measuring instruments are taught.

TEXT DATA

Coverage: Basic information on the underlying principles of the theory and construction of various instruments for measuring temperature - thermometers, pyrometers and electric resistance thermometers - is given in great detail. Instruments and apparatuses for quantitative

Teplotekhnicheskiye izmereniya i pribory.
Izd. vtor. pere. i dopol.

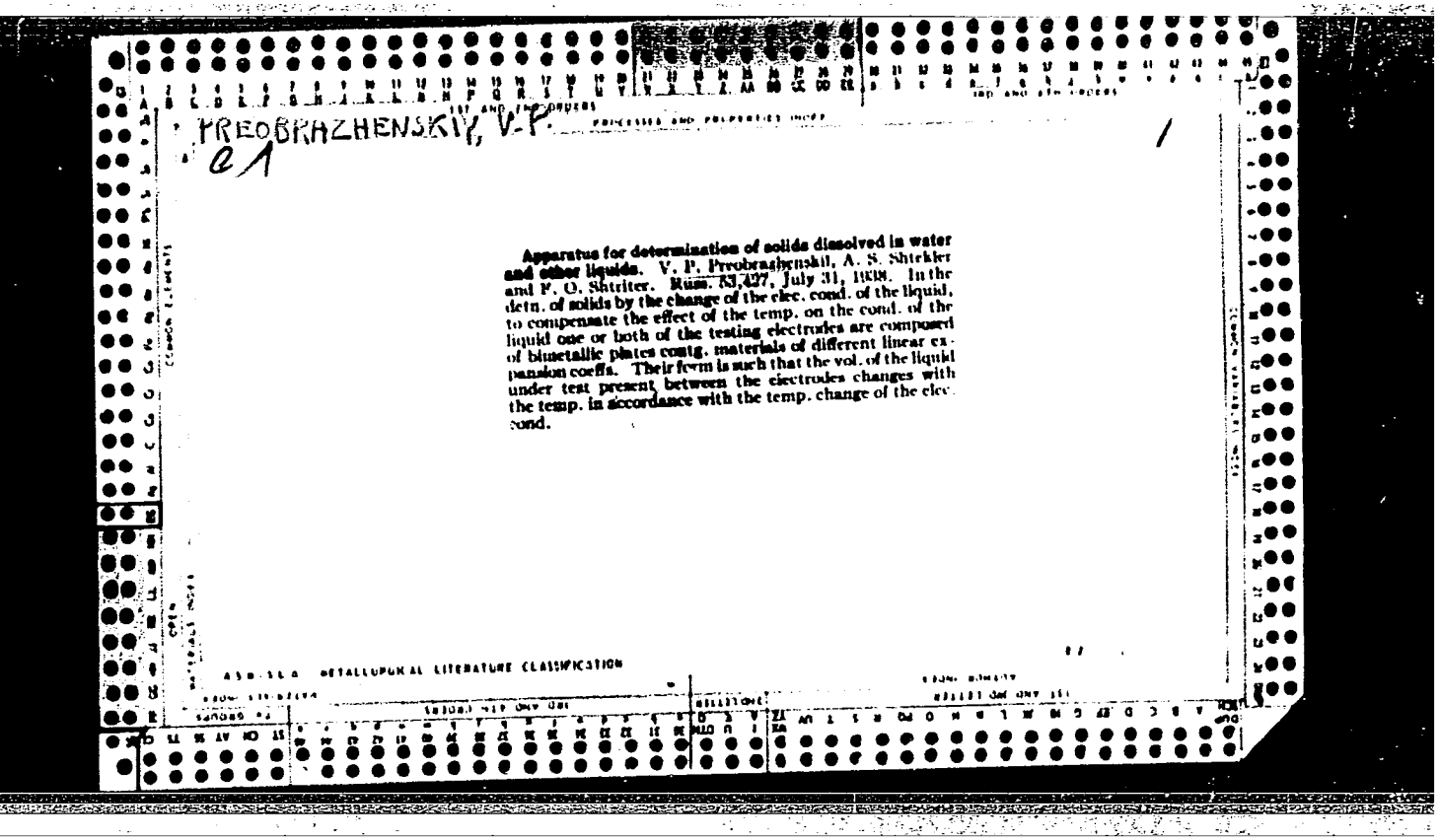
AID 557 - I

measurement of heat, steam and liquids, for indication of pressure and vacuum, and for analysis of gases and smoke gases in particular are fully described. The extent, methods of detection, and of correction or elimination of errors in instrument construction and function are presented. The book is well illustrated. Numerous diagrams of minute details of various instruments and mathematical formulae and tables are provided throughout the text.

No. of References: 38 Russian, 1932-1953

Facilities: Moscow Power Engineering Institute im. Molotov. The book is approved by the Main Administration of Higher Education of the Ministry of Culture of the USSR.

2/2



PREOBRAZHENSKIY, V.P.

Apparatus for determination of solids dissolved in water and other liquids. V. P. Preobrashenskii, A. S. Shtekler and P. O. Shtriter. Russ. 53,427, July 31, 1938. In the detn. of solids by the change of the elec. cond. of the liquid, to compensate the effect of the temp. on the cond. of the liquid one or both of the testing electrodes are composed of bimetallic plates contg. materials of different linear expansion coeffs. Their form is such that the vol. of the liquid under test present between the electrodes changes with the temp. in accordance with the temp. change of the elec. cond.

METALLURGICAL LITERATURE CLASSIFICATION

PREOBRAZHENSKIY, V.P., kand. tekhn. nauk; BUVIN, N.P., kand. tekhn. nauk; PINSKIY, F.I., inzh.; SOLON'KO, L.G., inzh.; CHISTYAKOV, V.S., inzh.

Measurement of the temperature of a pulsating gas flow. Energomashinostroenie 10 no.7:38-41 Jl '64. (MIRA 17:9)

PREOBRAZHENSKIY, V.S.

Physicogeographical division of the Donets Ridge into a natural region. Izv.AN SSSR.Ser.geog. no.3:100-108 My-Je '56. (MLRA 9:11)

1. Institut geografii AN SSSR.
(Donets Ridge)

PREOBRAZHENSKIY, V.S.

Compiling the legend of a medium scale map of landscape types with s specific purpose. Izv. AN SSSR. Ser. Geog. no.3:91-101 My-Je '57. (MIRA 10:12)

(Artography)

AUTHOR: Preobrazhenskiy, V.S. 10-58-3-7/29

TITLE: On Vertical Zonation in Intermountain Basins (O vertikal'noy poyasnosti v mezhgornykh kotlovinakh)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geograficheskaya, 1958, Nr 3, pp 58-59 (USSR)

ABSTRACT: Vertical zonation in mountains is usually regarded as dependent on the horizontal zone in which the mountains in question are located (Berg-1938, S.V. Kalesnik-1955, V.M. Fridland -1951, and the Great Soviet Encyclopedia). The author, however, asserts that the bottom of big troughs do not belong to the horizontal physico-geographical zone, but are as if transferred 1 or 2 zones southwards. There are 9 Soviet references.

ASSOCIATION: Institut geografii AN SSSR (Geographical Institute of the AS USSR)

AVAILABLE: Library of Congress

Card 1/1

1. Geology - Mountains

26-58-7-25/48

AUTHORS: Mukhina, L.I., Preobrazhenskiy, V.S., Candidate of Geographical Sciences

TITLE: Strips in the Mountain Forests of Transbaykalia (Polosy v gornoy tayge Zabaykal'ya)

PERIODICAL: Priroda, 1958, Nr 7, pp 101-102 (USSR)

ABSTRACT: Air photography has revealed that the mountain forests of Transbaykalia, especially the Stanovoye Highlands, are strips of forests alternating with treeless strips. This phenomenon is explained by the nature of the underlying relief which is an alternation of slightly raised and depressed strips. This feature applies especially to the 1,400 to 1,500 and 1,700 to 1,800-m regions above sea level and to 5 to 10°-slopes. The difference in height between these elevations and depressions is 0.5 to 1.5 m. The elevations are usually wider than the depressions. The soil formation differs also. The elevations usually are covered with small brittle rocky material from 1 to 3 to 12 to 18 cm size, while the depressions contain earth clods of 0.3 to 1 m size. The elevations carry deciduous trees of 7 to 15 m height with a diameter of 12 to 15 to 20 to 22 cm. There

Card 1/2

Strips in the Mountain Forests of Transbaykalia 26-58-7-25/48

is scarcely any underbrush. The depressions are grown over with moss and low shrubs, occasionally there are single trees of up to 25 m height and an age of about 300 years. There are 2 photos.

ASSOCIATION: Institut geografii AN SSSR - Moskva (The Institute of Geography of the AS USSR - Moscow)

1. Forestry--Theory--USSR

Card 2/2

PREOBRAZHENSKIY, V.S.; SETUNSKAYA, L.Ye.

New tourist maps. Vop.geog. no.42:158-163 '58. (MIRA 11:11)
(Russia--Maps) (Tourism)

PREOBRAZHENSKIY, Vladimir Sergeyevich; RIKHTER, G.D., doktor geograf.nauk, otv.red.; VOLYNSKAYA, V.S., red.izd-va; NOVICHKOVA, N.D., tekhn.red.

[Description of the nature of the Donets Ridge] Ocherki prirody Donetskogo kriazha. Moskva, Izd-vo Akad.nauk SSSR, 1959. 197 p. (MIRA 12:8)

(Donets Ridge--Physical geography)

PREOBRAZHENSKIY, V.S.; FADEYEVA, N.V.; MUKHINA, L.I.; TOMILOV, G.M.; MURZAYEV, E.M., doktor geograf.nauk, otv.red.; TUGARINOV, D.N., red.izd-va; MARKOVICH, S.G., tekhn.red.

[Types of landscape and natural zones of the Buryat A.S.S.R.] Tipy mestnosti i prirodnoe raionirovanie Buriatskoi ASSR. Moskva, Izd-vo Akad.nauk SSSR, 1959. 215 p. (MIRA 12:6)

1. Sotrudniki Instituta geografii Akademii nauk SSSR (for Preobrazhenskiy, Fadeyeva, Mukhina, Tomilov).
(Buryat-Mongolia--Physical geography)

SOV/10-59-4-7/29

3(5)

AUTHOR: Preobrazhenskiy, V.S.

TITLE: Alpine and Bare Rock Phenomena in the Kodar and Udokan Mountain Ranges of the Stanovoye Highland

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geograficheskaya 1959, Nr 4, pp 67-72 (USSR)

ABSTRACT: The article compares the two closely located (70-100 km) and little explored mountain ranges of the Stanovoye Highland, those of Kodar and Udokan. They are subject to conditions peculiar to the late glacial age. The comparison is made along the following lines: 1) characteristic traits in the morpho-sculpture of the upper layers; 2) distribution of ice layers; 3) structure of vertical vegetation belts; 4) distribution of snow. The Kodar range (highest elevation- 2,999.8 m; timber line - 1,500 to 1,600 m) is subject to phenomena peculiar to highlands with strong oceanic effects in which the highland belt has Alpine vegetation,

Card 1/2

SOV/10-59-4-7/29

Alpine and Bare Rock Phenomena in the Kodar and Udokan Mountain Ranges of the Stanovoye Highland

whereas the Udokan range (highest point - 2,515 m; timber line - 1,650 to 1,700 m) is subject to phenomena peculiar to continental highland systems, with its highland vegetation belt having the characteristics of that of bare rocks. The main difference between the two mountain ranges is caused by the varying amount of humidity in the shape of snow. The Udokan range has relatively little snow, yet a considerable amount of ice layers, whereas the Kodar range has more snow, yet fewer ice layers. According to Academician I.P. Gerasimov, this area can be called "contemporary remnants of the late glacial age". There is 1 Soviet reference.

ASSOCIATION: Institut geografii AN SSSR (Institute of Geography AS USSR)

Card 2/2

PREOBRAZHENSKIY, V.S.

Temporary ice fields of the Stanovoye Upland. Bot.zhur. 44 no.6:816-819 Je '59. (MIRA 12:11)

1. Institut geografii AN SSSR, Moskva.
(Stanovoye Upland--Botany)